1. A method for controlling audio gain balance in a multi-mode communications device comprising the steps of:

5   providing at least one microphone for inputting audio to the multimode communications device;

          supplying the audio to at least one gain stage;

          computing a dynamic instantaneous energy value of the audio input when in a first operational mode;

10   processing a predetermined gain algorithm representing an audio input when in a second operational mode using the energy value; and

          adjusting the at least one audio gain stage in the multi-mode communications device so that audio gain when in 15   the first operational mode substantially approximates an audio gain when in an second operational mode.

2. A method for controlling audio gain balance as in claim 1, wherein the dynamic instantaneous energy value of the 20   audio input is determined using the mathematical square of the of the audio voltage.

3. A method for controlling audio gain balance as in claim 1, wherein the step of processing includes computing a 25   polynomial using the dynamic instantaneous energy value.

4. A method for controlling audio gain balance as in claim 1, wherein the step of processing includes computing a polynomial which was determined using linear regression 30   based on an energy value input and normalized energy outputs in both modes of operation.

5. A method for controlling audio gain balance as in claim 1, wherein the step of processing includes smoothing the dynamic instantaneous energy value to prevent peaks beyond a predetermined limit.

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6. A method for controlling audio gain balance as in claim 1, wherein the first operational mode is an analog mode.

7. A method for controlling audio gain balance as in claim 10 1, wherein the second operational mode is a digital mode.

8. A method for balancing microphone audio gain in a communications device transmitting analog and digital voice comprising the steps of:

5   providing at least one microphone audio input to the communications device;

   computing an instantaneous energy value of the audio microphone input when in a digital voice mode;

   smoothing the instantaneous energy value using at least
10 one filter for dampening peak values;

   processing at least one gain algorithm representing an analog microphone audio gain using the instantaneous energy value; and

   adjusting at least one gain stage of the communications
15 device based on the processed at least one gain algorithm so the at least one microphone audio input when in a digital mode substantially approximates the at least one microphone audio input when in an analog mode.

20 9. A method for balancing microphone audio gain in claim 8, wherein the instantaneous energy value of the audio microphone input is determined using the mathematical square of the of the audio voltage.

25 10. A method for controlling audio gain balance as in claim 8, wherein the step of processing includes computing a polynomial using linear regression and the instantaneous energy value.

11. A method for balancing the audio output in a two-way radio receiver that operates in both first and second voice modes comprising the steps of:

5 providing at least one speaker input;

determining a desired voice gain algorithm when in the first voice mode;

determining an energy value of the at least speaker input when in the second voice mode;

10 using a filter to normalize the energy value;

processing the desired voice gain algorithm using the energy value from the second voice mode; and

dynamically adjusting at least one speaker gain stage using the processed desired voice gain algorithm such that

15 the speaker gain when in the second voice mode substantially approximates the microphone gain when in the first voice mode.

12. A method for controlling audio gain balance as in claim

20 11, wherein the energy value of the audio input is determined using the mathematical square of the of the audio voltage.

13. A method for controlling audio gain balance as in claim

25 11, wherein the step of processing includes computing a polynomial using linear regression and the energy value.